

## Patent Claims

1. A lathe with a vertically positioned motor-driven work spindle on whose lower end are positioned workpiece clamps, with an initial compound slide system by means of which the work spindle can move vertically in the Z1 direction and horizontally in the X1 direction, with at least one initial stationary tool holder, and with at least one second tool holder which can execute an advancing action in at least one direction during the machining process, while the advancing movement of the second tool holder is independent of the control of the first compound slide system,  
wherein  
the second tool holder (46) can be moved in controlled fashion along two axes by a second compound slide system (28, 30, 32, 34) and the movement of the second tool holder (46) is synchronized with the movement of the first compound slide system (19) in such a way that the movement of the second tool holder (46) is an arithmetic overlay of the movement of the first compound slide system (19) and the relative movement between the workpiece and the second tool holder (46).
2. A lathe according to claim 2, wherein the axes of movement (Z1, X1) of the first compound slide system (19) and the axes of movement (Z2, X2) of the second compound system (28, 30, 32, 34) run parallel to each other.
3. A lathe according to one of the preceding claims, wherein the second or more tool holders (46) are positioned on a turret holder plate (44).
4. A lathe according to one of the preceding claims, wherein the second or more tool holders (16), their guides (28, 30, 32, 34), and their drives (36, 38, 40, 42) are consolidated into a structural module.

5. A lathe according to claim 5, wherein a machine tool table with two columns (12) is provided, a work space (16) is positioned between the two columns (12), and the first tool holder (22) and the structural module for the second tool holder (46) are positioned between the columns (12), on opposite sides of the work space (16).